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The Relation between Fluorescence and Chemical Constitution of Organic Compounds

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26. The Relation between Fluorescence and Chemical Constitution of Organic Compounds

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Fluorescence of naphth [1, 2] imidazoles and perimidines, which were described in the previous report was compared in alcoholic solution with that of the standard solution of certain organic fluorescent compound under ultraviolet light (3650Å). The results were as follows:

1. Emissivity of fluorescence of naphth [1, 2] imidazole ring was larger than that of perimidine ring.
2. The introduction of conjugated system to 2-position of naphth [1, 2] imidazole increased the emissivity of fluorescence to some extent.
3. The introduction of conjugated system to 2-position of perimidine showed scarcely any effect.

These results are well explained according to our theory (Memoirs of the Faculty of Engineering, Kyoto University, **13**, 108-122 (1951)) and Hirschberg (J. Am. Chem. Soc. **72**, 5117 (1950)).

Synthesized naphth [1, 2] imidazoles are useful for optical bleaching agent, since they emit blue violet~greenish blue strong fluorescent light.

27. The Effect of the Catalyst on the Mono-Esterification Rate of Phthalic Anhydride by Alcohols

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We newly found that the mono-esterification rate of phthalic anhydride by alcohol was accelerated by the addition of HCl, and these catalytic reaction rates for propyl-, butyl-, isobutyl- and cyclohexyl-alcohol were respectively investigated in detail.

The reaction rate was the first order with respect to the concentration of phthalic anhydride by using alcohol in excess, and a part of observed rate constants k_1 is shown in Table 1.